

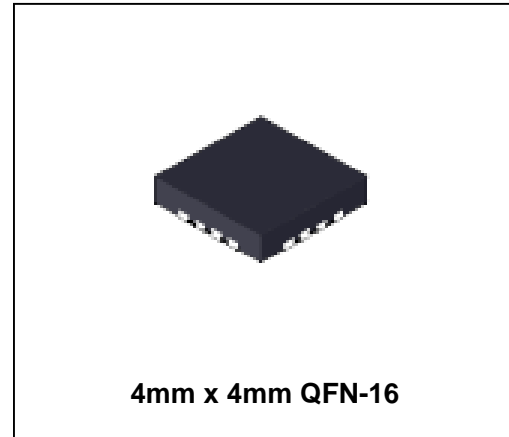
LDMOS RF Line Power FET Transistor 2 W , 800-2200 MHz, 28V

**Discontinued
(For Reference Only)**

Designed for broadband commercial applications up to 2.2GHz

- High gain, high efficiency and high linearity
- Ease of design for gain and insertion phase flatness
- Excellent thermal stability
- W-CDMA performance at 2.17GHz, 28Vdc
Average output power: 28dBm @ -39dBc ACPR
Gain: 14.5dB (typ.)
Efficiency: 23% (typ.)
10:1 VSWR ruggedness at 2W (CW), 28V, 2.11GHz
- Performance at 960MHz, 26Vdc, P_{1dB}
Average output power: 2W min.
Gain: 20dB (typ.)
Efficiency: 50% (typ.)
10:1 VSWR ruggedness at 2W, 26V, 960MHz

Product Image



MAXIMUM RATINGS

| Parameter | Symbol | Rating | Units |
|--|------------------|-------------|-----------------|
| Drain—Source Voltage | V _{DSS} | 65 | V _{dc} |
| Gate—Source Voltage | V _{GS} | +15, -0.5 | V _{dc} |
| Total Power Dissipation @ T _C = 25 °C | P _D | 6.9 | W |
| Storage Temperature | T _{STG} | -65 to +150 | °C |
| Junction Temperature | T _J | 150 | °C |

THERMAL CHARACTERISTICS

| Characteristic | Symbol | Max | Unit |
|--------------------------------------|------------------|-----|------|
| Thermal Resistance, Junction to Case | R _{θJC} | 18 | °C/W |

NOTE—**CAUTION**—MOS devices are susceptible to damage from electrostatic charge. Precautions in handling and packaging MOS devices should be observed.

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| Characteristic | Symbol | Min | Typ | Max | Unit |
|---|---------------|-----|------|-----|------|
| DC CHARACTERISTICS @ 25°C | | | | | |
| Drain-Source Breakdown Voltage ($V_{GS} = 0$ Vdc, $I_D = 30$ μ Adc) | $V_{(BR)DSS}$ | 65 | — | — | Vdc |
| Gate Threshold Voltage ($V_{ds} = 26$ Vdc, $I_d = 25$ mA) | $V_{GS(th)}$ | 2 | — | 5 | Vdc |
| Gate Quiescent Voltage ($V_{ds} = 26$ Vdc, $I_d = 25$ mA) | $V_{GS(Q)}$ | 3 | — | 5 | Vdc |
| Drain-Source On-Voltage ($V_{gs} = 10$ Vdc, $I_d = 0.1$ A) | $V_{DS(on)}$ | — | 0.30 | — | Vdc |

| RF FUNCTIONAL TESTS @ 25°C (In M/A-COM Test Fixture) | | | | | |
|---|----------------|--|----|---|----|
| Common Source Amplifier Gain ($V_{DD} = 28$ Vdc, $I_{DQ} = 35$ mA, $f = 2170$ MHz, $P_{OUT} = 2$ W) | G_P | — | 14 | — | dB |
| Drain Efficiency ($V_{DD} = 28$ Vdc, $I_{DQ} = 35$ mA, $f = 2170$ MHz, $P_{OUT} = 2$ W) | EFF (η) | — | 38 | — | % |
| Input Return Loss ($V_{DD} = 28$ Vdc, $I_{DQ} = 35$ mA, $f = 2170$ MHz, $P_{OUT} = 2$ W) | IRL | — | -9 | — | dB |
| Output VSWR Tolerance ($V_{DD} = 28$ Vdc, $I_{DQ} = 35$ mA, $f = 2170$ MHz, $P_{OUT} = 2$ W, VSWR = 10:1, All Phase Angles at Frequency of Tests) | Ψ | No Degradation In Output Power Before and After Test | | | |

| RF FUNCTIONAL TESTS @ 25°C (In M/A-COM Test Fixture shown in Figure 10) | | | | | |
|---|----------------|--|------|---|----|
| Common Source Amplifier Gain ($V_{DD} = 26$ Vdc, $I_{DQ} = 35$ mA, $f = 1900$ MHz, $P_{OUT} = 2$ W) | G_P | — | 14.5 | — | dB |
| Drain Efficiency ($V_{DD} = 26$ Vdc, $I_{DQ} = 35$ mA, $f = 1900$ MHz, $P_{OUT} = 2$ W) | EFF (η) | — | 40 | — | % |
| Input Return Loss ($V_{DD} = 26$ Vdc, $I_{DQ} = 35$ mA, $f = 1900$ MHz, $P_{OUT} = 2$ W) | IRL | — | -10 | — | dB |
| Output VSWR Tolerance ($V_{DD} = 26$ Vdc, $I_{DQ} = 35$ mA, $f = 1900$ MHz, $P_{OUT} = 2$ W, VSWR = 10:1, All Phase Angles at Frequency of Tests) | Ψ | No Degradation In Output Power Before and After Test | | | |

(1) Device specifications obtained on a Production Test Fixture.

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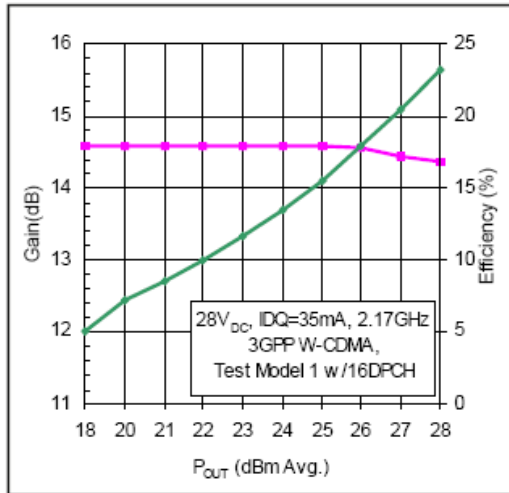
Discontinued
(For Reference Only)

| Characteristic | Symbol | Min | Typ | Max | Unit |
|---|----------------|--|-----|-----|------|
| RF FUNCTIONAL TESTS @ 25°C (In M/A-COM Test Fixture) | | | | | |
| Common Source Amplifier Gain ($V_{DD} = 26$ Vdc, $I_{DQ} = 35$ mA, $f = 1670$ MHz, $P_{OUT} = 2$ W) | G_P | — | 15 | — | dB |
| Drain Efficiency ($V_{DD} = 26$ Vdc, $I_{DQ} = 35$ mA, $f = 1670$ MHz, $P_{OUT} = 2$ W) | EFF (η) | — | 45 | — | % |
| Input Return Loss ($V_{DD} = 26$ Vdc, $I_{DQ} = 35$ mA, $f = 1670$ MHz, $P_{OUT} = 2$ W) | IRL | — | -11 | — | dB |
| Output VSWR Tolerance ($V_{DD} = 26$ Vdc, $I_{DQ} = 35$ mA, $f = 1670$ MHz, $P_{OUT} = 2$ W, VSWR = 10:1, All Phase Angles at Frequency of Tests) | Ψ | No Degradation In Output Power Before and After Test | | | |

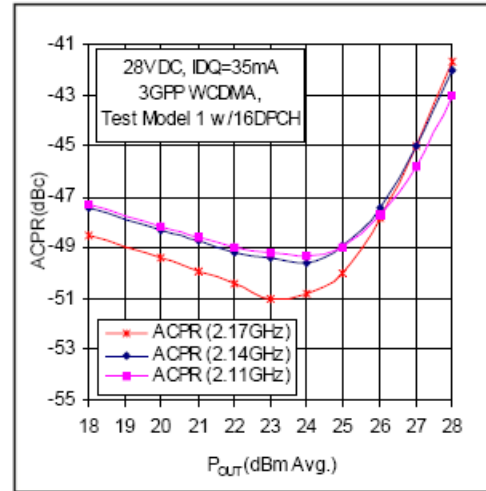
| | | | | | |
|--|----------------|--|-----|---|----|
| RF FUNCTIONAL TESTS @ 25°C (In M/A-COM Test Fixture shown in Figure 12) | | | | | |
| Common Source Amplifier Gain ($V_{DD} = 26$ Vdc, $I_{DQ} = 50$ mA, $f = 960$ MHz, $P_{OUT} = 2$ W) | G_P | — | 20 | — | dB |
| Drain Efficiency ($V_{DD} = 26$ Vdc, $I_{DQ} = 50$ mA, $f = 960$ MHz, $P_{OUT} = 2$ W) | EFF (η) | — | 50 | — | % |
| Input Return Loss ($V_{DD} = 26$ Vdc, $I_{DQ} = 50$ mA, $f = 960$ MHz, $P_{OUT} = 2$ W) | IRL | — | -12 | — | dB |
| Output VSWR Tolerance ($V_{DD} = 26$ Vdc, $I_{DQ} = 50$ mA, $f = 960$ MHz, $P_{OUT} = 2$ W, VSWR = 10:1, All Phase Angles at Frequency of Tests) | Ψ | No Degradation In Output Power Before and After Test | | | |

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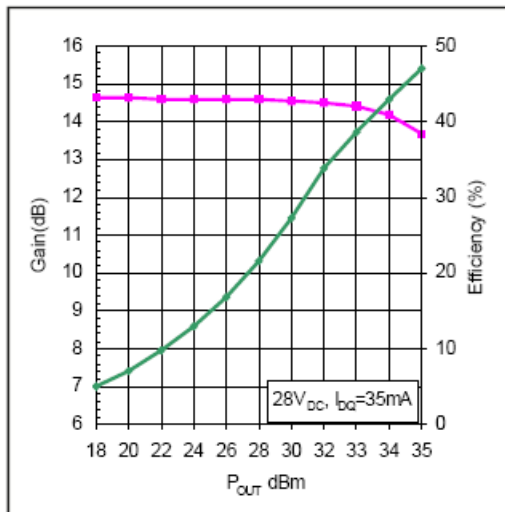
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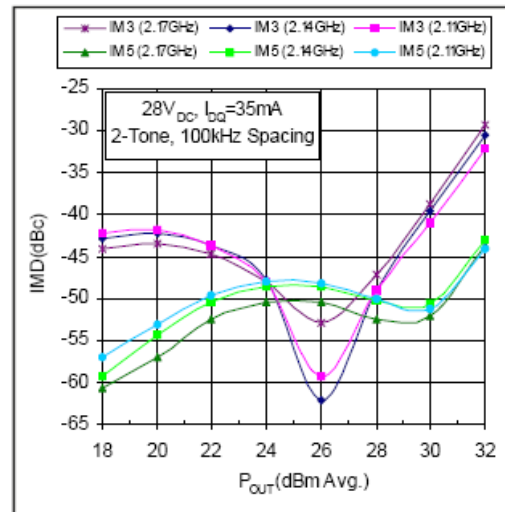
**W-CDMA: Gain and Efficiency vs Output Power
Graph 1.**



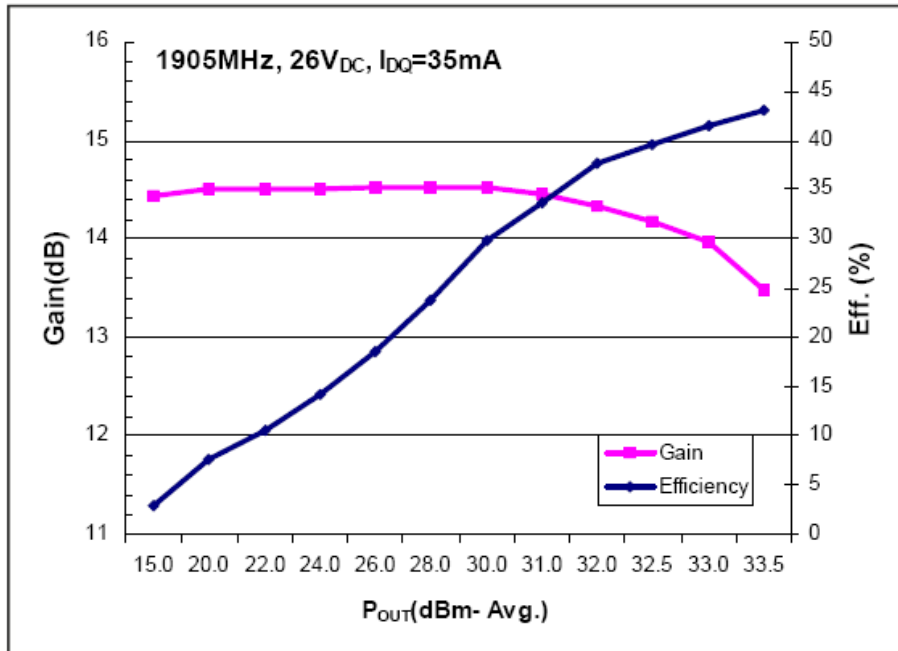
**W-CDMA: ACPR vs Output Power.
Graph 2.**



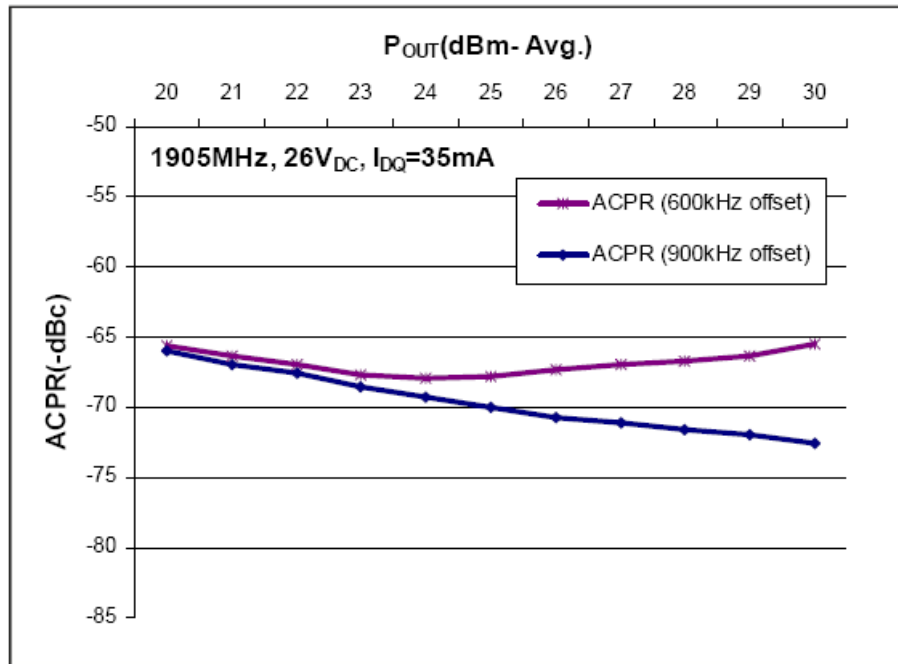
**CW: Gain and Efficiency vs Output Power
Graph 3.**



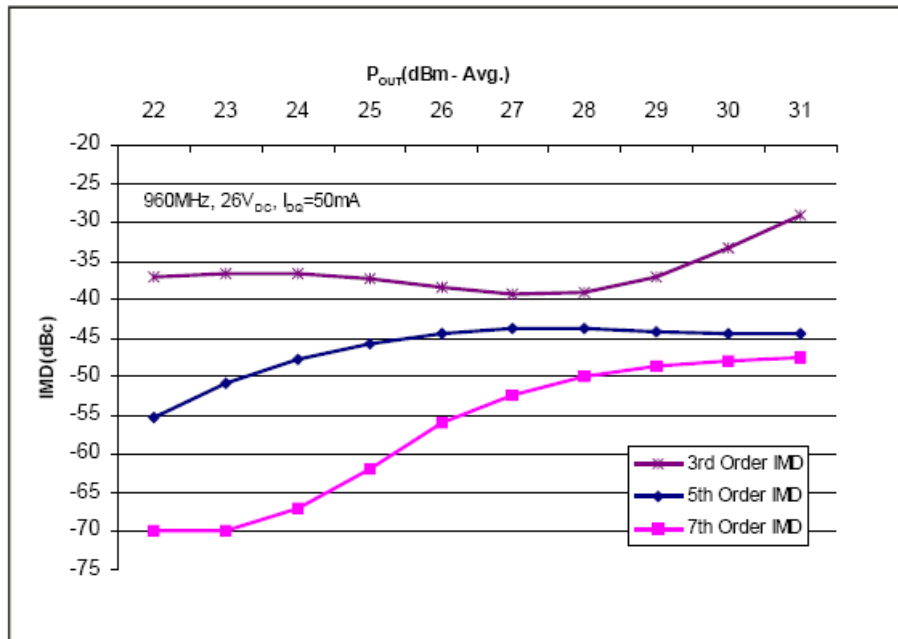
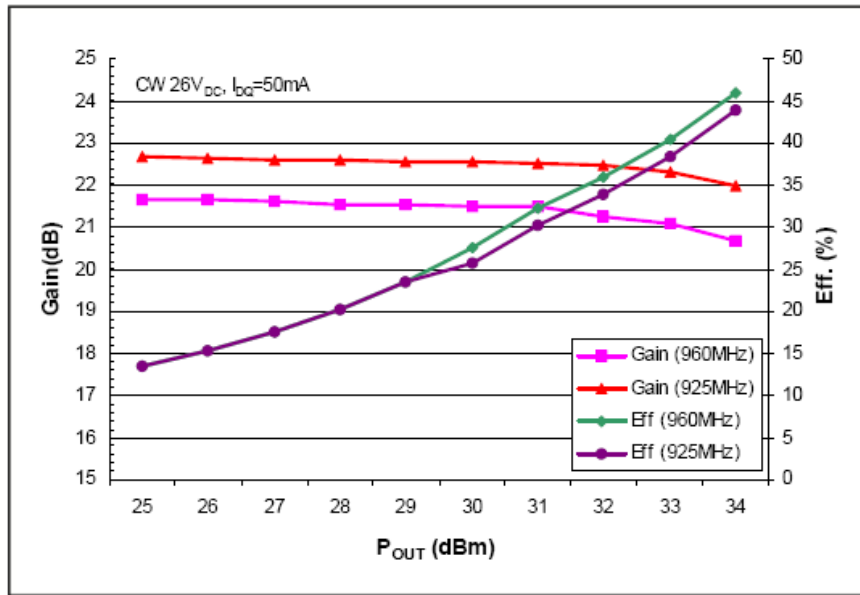
**Two Tone: Intermodulation Distortion vs Output Power
Graph 4.**



GRAPH 5. PHS POWER GAIN AND DRAIN EFFICIENCY VS. OUTPUT POWER



GRAPH 6. PHS ACPR VS. OUTPUT POWER



GRAPH 8. INTERMODULATION DISTORTION VS. OUTPUT POWER

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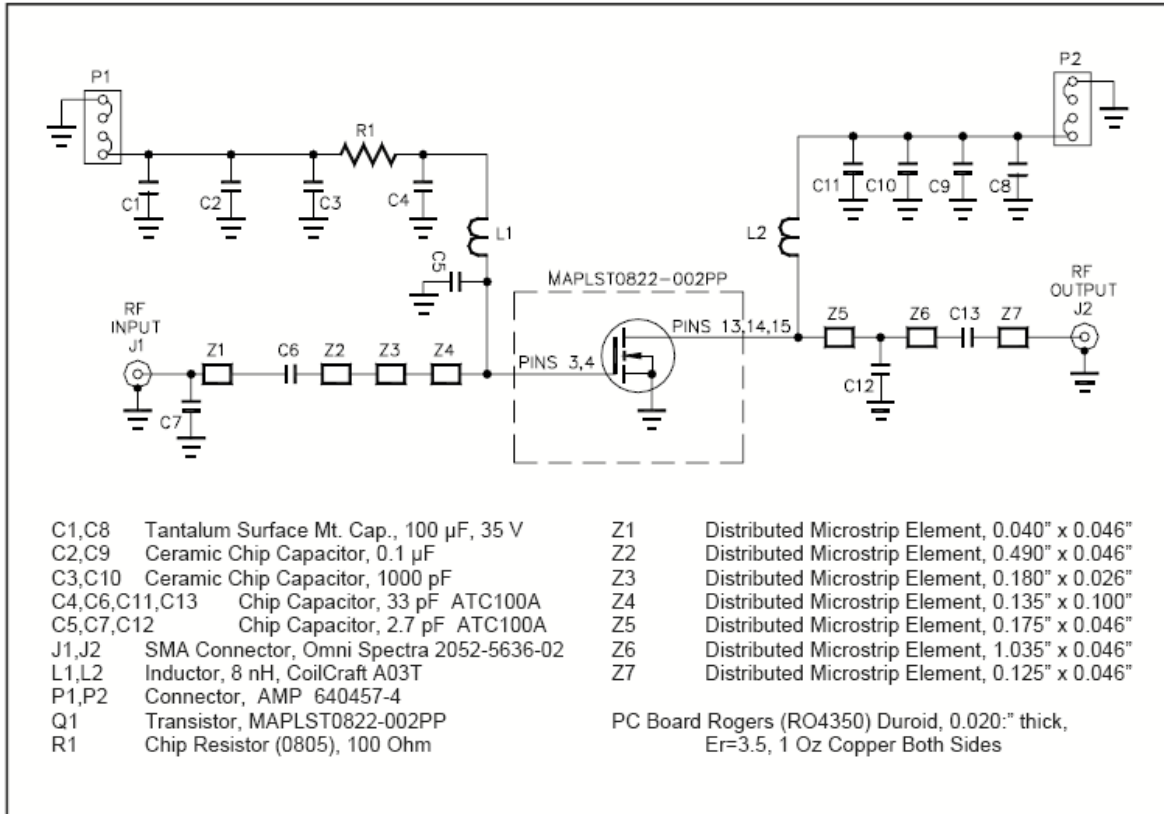


FIGURE 9. 1880—1920 MHz TEST FIXTURE SCHEMATIC

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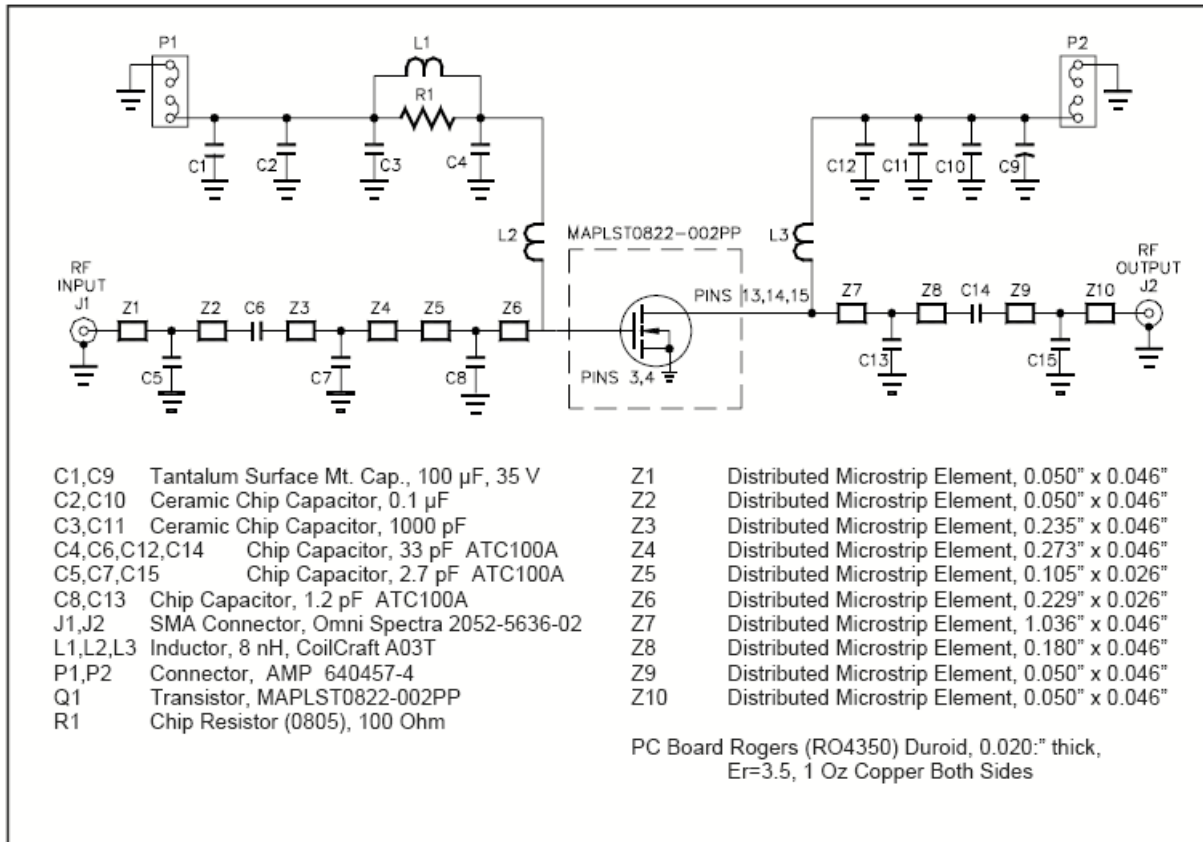


FIGURE 11. 920—960 MHz TEST FIXTURE SCHEMATIC

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**Discontinued
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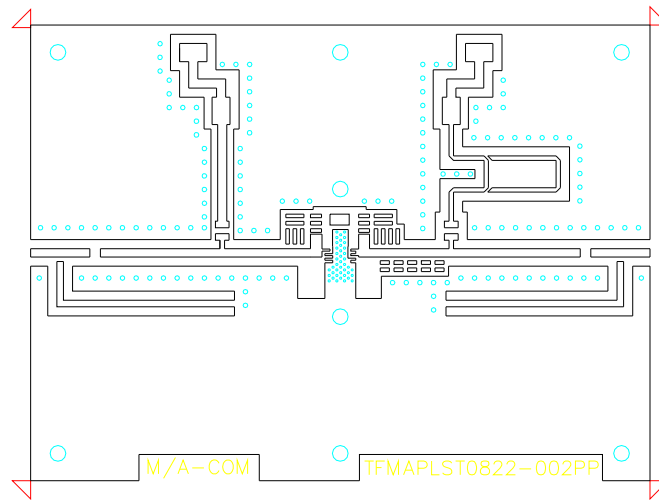
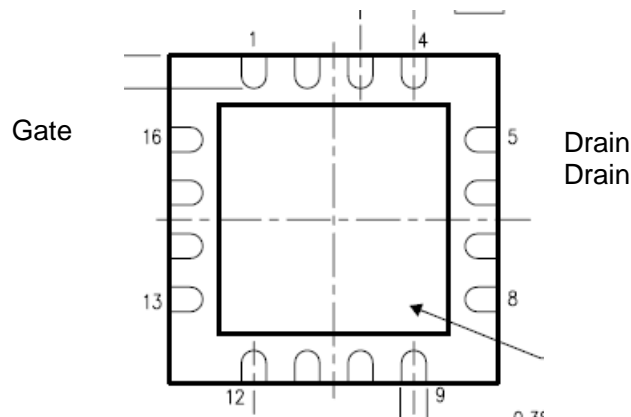


FIGURE 12. TEST FIXTURE PCB LAYOUT



Note: All other leads and bottom pad-
dle are connected to the Source

FIGURE 13. 4 MM X 4 MM QFN PIN CONNECTIONS

PACKAGE DIMENSIONS

